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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO.     | CONFIRMATION NO.          |
|--|-------------|------------------------|-------------------------|---------------------------|
| 09/802,956   | 03/12/2001  | Dimitris K. Agrafiotis | 1503.0200006            | 7862                      |
| 7590   | 12/11/2003  |                        |                         | EXAMINER<br>BRODA, SAMUEL |
| Vicki G. Norton<br>PILLSBURY WINTHROP LLP<br>11682 El Camino Real<br>Suite 100<br>San Diego, CA 92130-2092 |             |                        | ART UNIT<br>2123        | PAPER NUMBER<br>13        |
|  |             |                        | DATE MAILED: 12/11/2003 |                           |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                          |                   |
|------------------------------|--------------------------|-------------------|
| <b>Office Action Summary</b> | Application No.          | Applicant(s)      |
|                              | 09/802,956               | AGRAFIOTIS ET AL. |
|                              | Examiner<br>Samuel Broda | Art Unit<br>2123  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 12 March 2001.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 and 2 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 November 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

|   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) Z . | 6) <input type="checkbox"/> Other: _____ .                                   |

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### **DETAILED ACTION**

1. Claims 1 and 2, originally presented in the original filing of Application No. 08/963,872, have been examined.

#### *Information Disclosure Statement*

2. Applicants submitted a 36 page Information Disclosure Statement containing some duplicate entries. When compared to the prior art submitted in Application No. 08/963,872, many of the newly submitted references have publication dates well after the 4 November 1997 filing date of Application No. 08/963,872; it is unclear why Applicants submitted these references.

#### *Drawings*

3. Applicants' formal drawings have been reviewed and approved by the PTO Draftsperson.

#### *Specification*

4. The disclosure is objected to because the title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Correction is required.

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*Abstract*

5. The abstract of the disclosure is objected to because none of the claims are directed to a “system” or “computer program product” regarding the visualization and interactive analysis of data relating to chemical compounds. Correction is required. See MPEP 608.01(b).

*Claim Rejections - 35 U.S.C. § 112, Second Paragraph*

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.1 Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

6.2 Regarding claims 1 and 2, these claims include the terms “enabling a user” and/or “enabling the user.” These terms make the scope of the claims indefinite as it is unclear if the functions recited after these terms represent an intended use or an additional limitation.

6.3 Regarding claim 2, the term “enabling the user to interactively analyze compounds” is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 U.S.C. § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7.1 Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Good et al, "Structure-Activity Relationships from Molecular Similarity Matrices", Journal of Medicinal Chemistry, Vol. 36 No. 4, pp. 433-438 (February 1993), in view of Herndon, "Similarity and Dissimilarity of Molecular Structures", reported in Warr, "Exploiting Molecular Diversity", pp. 23-25 (February 1995), and further in view of Egger et al, U.S. Patent 5,832,494 issued on 3 November 1998 and filed 17 May 1996 (prior art previously supplied to Applicants).

7.2 Good et al teaches a method of calculating and displaying molecular similarity matrices using a variety of metrics. See Fig. 3 and corresponding text on page 435. According to Good et al, "These results show that data matrices derived from molecular similarity calculations can provide the basis for rapid elucidation of both qualitative and quantitative structure--activity relationships." See abstract. Good et al, however, does not appear to teach a method allowing a user to make both compound and similarity selections prior to the generation of a map.

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According to Warr, Herndon described the varied types of metrics available for determining molecular similarity:

Metrics for measuring molecular similarity have been based on functional groups, structure fragments of various sizes, drawings, systematic names, topological indices, shapes, silhouettes, 3D surfaces, codes, electrostatic potentials, calculated charge distributions, etc.

See page 23. Further according to Warr, Herndon described procedures to attempt to determine the best procedures for calculating similarity, and displayed graphical results to illustrate data analyzed using various similarity calculations. See p. 25.

Taken together, Good et al and Herndon teach the generation of similarity maps, and further teach that various similarity metrics exist and can be compared, but do not suggest a computer implemented method allowing for the interactive selection of compounds and similarity metrics. However, Egger et al teaches a computer implemented method of performing similarity calculations in conjunction with a graphical user interface. See Figs. 5B-5G and Figs. 8-1 through 8-3, and the text describing the Proximity Indexing Application Program 62.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the similarity calculations of Good et al and allow for the comparison of similarity metrics as taught by Herndon, in conjunction with a graphical user interface taught by Egger et al, because such a combination would allow for the visual comparison of compounds using various similarity metrics, enabling a user to locate similar compounds and analyze the results by comparing maps generated using different similarity metrics.

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***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.
9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.



**SAMUEL BRODA, ESQ.  
PRIMARY EXAMINER**